

**WHAT IS CLAIMED IS:**

1. A rotary shaft for use in the drive line of a motor vehicle, the shaft comprising internal dampening means to absorb vibration energy of the rotary shaft and increase the resonant frequency of bending of the shaft.

2. A rotary shaft as in claim 1, wherein the dampening means comprises a layer of ceramic material deposited on an inside surface of the shaft.

3. A rotary shaft as in claim 1, wherein the dampening means comprises an insert comprising:

a heat resistant layer;

a substantially rigid substrate; and

a ceramic layer deposited atop the substrate.

4. A rotary shaft as in claim 3, wherein the dampening means is removable.

5. A rotary shaft as in claim 3, wherein the dampening means is attached to an inside surface of the shaft.

6. A rotary shaft as in claim 3, wherein the heat resistant layer comprises cardboard.

7. A rotary shaft as in claim 3, wherein the substrate comprises a wire mesh.

8. A rotary shaft as in claim 7, wherein the wire mesh is comprised of stainless steel.
9. A rotary shaft as in claim 2, wherein said layer of ceramic is arranged on a predetermined section of the shaft.
10. A rotary shaft as in claim 1, wherein said dampening means increases the resonant frequency by approximately 35%.
11. A shaft for use in a motor vehicle, said shaft including;  
a tube-like section; and  
a ceramic insert arranged on or near a surface of said tube section, said ceramic insert increases the resonant frequency of the shaft.
12. The shaft of claim 11, wherein said ceramic insert is bonded to an inside surface of said tube section.
13. The shaft of claim 12, wherein said ceramic insert is arranged on predetermined sections of said tube.
14. The shaft of claim 12, wherein said ceramic insert is arranged along the entire length of said tube section.

15. The shaft of claim 12, wherein said ceramic insert further including a heat resistant layer.

16. The shaft of claim 15, wherein said ceramic insert further including a substantially rigid substrate coated with said ceramic.

17. The shaft of claim 16, wherein said heat resistant layer is a cardboard.

18. The shaft of claim 17, wherein said substantially rigid substrate is a stainless steel mesh.

19. The shaft of claim 11, wherein said ceramic insert increases said resonant frequency by approximately 35%.

20. The shaft of claim 11, wherein said ceramic insert is removable.

21. The shaft of claim 11, wherein said tube section is made of steel or aluminum.